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COLLECTIONS

FOR

AN ESSAY

TOWARDS A

MATERIA MEDICA

OF THE

UNITED-STATES.

By BENJAMIN SMITH BARTON, M. D.

PROFESSOR OF MATERIA MEDICA, NATURAL HISTORY, AND BOTANY,
IN THE UNIVERSITY OF PENNSYLVANIA.

PART FIRST.

THE SECOND EDITION.

PHILADELPHIA:

PRINTED, FOR THE AUTHOR,

BY ROBERT CARR.

.....

1801.

" ALIT impetum persuasio non in sterili me campo laborare,
" dum vires ad illam scientiam intendo, quae praxeos medicae
" ALTER OCULUS est."

J. A. MURRAY.

TO

JAMES EDWARD SMITH, M. D. F. R. S.

PRESIDENT OF THE LINNÆAN SOCIETY,

MEMBER OF THE ROYAL ACADEMIES OF TURIN, UPSAL, AND LISBON;

AND

MEMBER OF THE AMERICAN PHILOSOPHICAL SOCIETY.

DEAR SIR,

I CANNOT expect to add any thing to your reputation, by dedicating to you the following pages. I mean not, by this act, to choose a patron who shall veil my faults, or screen me from the censure of the public critic. The actions of men, particularly perhaps of young men, are sometimes disinterested. It is with pleasure I declare to the public, how much I admire your exertions for the extension of that amiable science, which both of us cultivate: you with the happiest success; I with an humble ardour.

THE age in which we live is the age of natural science. The mind of LINNÆUS has effected more than the combined intellects of all the naturalists of any preceding century. Natural History, however, is yet an infant science. This is particularly the case with respect to America. Even the *nomenclature* of our productions is extremely imperfect. We are still less acquainted with the *properties* of our productions. I view this

blank in the history of science, with pain. This pain, however, is daily diminished: for something is daily added to the stock of our knowledge.

I AM far from insinuating, that what I offer you is important in its kind. I am fully sensible of the imperfections of this Essay. I could wish it were more worthy of your attention. If I succeed in convincing you, that there are some lovers and cultivators of Botany in the United-States, one of my objects in writing this dedication will be accomplished.

ACCEPT of my sincere wishes for your happiness, and believe me to be, with great respect,

Dear Sir,

Your friend and humble servant, &c.

BENJAMIN SMITH BARTON.

Philadelphia,
March 12*th*, 1798.

PREFACE.

MY *Collections for an Essay towards a Materia Medica of the United-States* have been favourably received by the public. I ought, perhaps, to mention this circumstance with some degree of surprize; for when I published the work, I was not ignorant how extremely superficial and imperfect it was. With all its faults, however, the "honest trifle" has served some useful purposes. It has called the attention of some of my countrymen to the study of the nature and properties of the indigenous vegetables of the United-States: in particular, in the hands of the student of medicine, it has been useful as a guide (always feeble, and sometimes illusory), in conducting him through the extensive wilderness of our riches.

A NEW edition of the "Collections" has been called for. I might have satisfied the desires of a few, had I consented to republish the work, in its original form. By doing this, I might, also, have consulted my own ease and convenience, distracted as I have been by sickness, or engaged in pursuits, which required more steady and laborious attention. But I should not have satisfied myself. As I saw the errors and imperfections of the work, it became my duty to do *somewhat* towards re-

medying them. Besides, it has always appeared to me, that an author has but little claim upon the attention and the favours of the public, unless he renders the second more perfect than the former editions of his works. I determined to reprint the work, in a more enlarged and improved state. But I did not think it would be just or delicate to change the title of the work. The facts and observations which it contains are thrown together with too little regard to method, to give it a claim to the title of an Essay.

It is not difficult to discover in what respects the present work differs from the former "Collections." I have, indeed, reprinted the original Discourse, delivered before the Medical Society, in every *essential* respect a copy of the former work. The only alterations which I have made are too trivial to be particularly noticed. Indeed, the reader of the two editions would hardly be able to discover the difference. I hope, however, that I have increased the value of the discourse, by the addition of a number of notes, at the bottom of the page. I have also added an Appendix, which contains, besides almost all the remarks contained in the appendix of the former edition, a considerable portion of matter, some of it chiefly of a practical nature, which had no place in the original work.

I have entitled this little volume "Part First," because it is my intention to publish at least one part more, relative to other indigenous medicinal productions of the United-States. For such an additional volume, I am already in possession of sufficient materials. But the very imperfect state of my health renders it uncertain, when the Second Part will appear. I shall endeavour to

give it to the public sometime in the course of the ensuing year, or early in the spring of 1803. Should it never appear, the loss (save by the student in pursuit of subjects for inquiry, and in want of a guide somewhat more experienced than himself) will be but little felt. The present publication, meanwhile, may be considered as a complete or distinct work, in itself.

Philadelphia, December 2d, 1801.

POSTSCRIPT.

With the view to extend the knowledge of those indigenous vegetables of the United-States, which are possessed of useful medical powers, I have it in contemplation to publish a series of engravings, of the principal medicinal vegetables of our country. When the whole of this scheme will be accomplished, it is difficult to say. But I think it may not be amiss to give, in this place, a general idea of the work which I meditate.

Of the native North-American vegetables, which are worthy of the attention of physicians, some are entirely new, and have never been figured by any writer: others have been inacurately or imperfectly figured; whilst of some, correct and elegant plates have already been given to the public. It is unnecessary to say, that of those vegetables which have not been figured at all, or which have been but badly figured, the public ought

to be furnished with just and elegant representations. Such it is my intention to publish. But it is even desirable, that the American physician should possess a work, which shall bring together, into one view, the representations of the principal valuable native plants, as well those which have as those which have not been well engraved. My scheme, accordingly, comprehends both descriptions of our indigenous vegetables. In the earlier numbers of the plates, however, my attention will be particularly directed to the latter class of plants.

I DESIGN to publish the work in *Decades*, or separate parts ; each decade, as the name implies, to contain ten plates. Each plate shall be accompanied with a full description of the plant, in Latin and in English, and shall contain references to the principal authors who have mentioned it. But of the *medical* properties of the plants nothing minute or particular will be said, as the work is solely intended to illustrate the history of those vegetables of which mention is made in these *Collections*, or in the subsequent parts of them, which I design to publish. Even, however, to the botanist, who is careless of the *American Materia Medica*, the plates will be useful.

THE plates shall be engraven from original drawings, taken by able artists from the living plants. At present, it is my intention to publish them in a quarto form, nearly of the size of the plates in Dr. Woodville's *Medical Botany*. The plates of some copies of the work shall be coloured.

THE first and second decades of the work will contain engravings of some of the following medicinal

vegetables of the United-States; the greater part of which are more or less noticed in the present volume of *Collections*. Zea Mays, Zizania aquatica, Geranium maculatum, Heuchera Americana, Arbutus Uva ursi, Comptonia asplenifolia, Prunus Virginiana, Diospyros Virginiana, Myrica cerifera, Cornus florida, Cornus sericea, Magnolia glauca, Magnolia acuminata, Liriodendron Tulipifera, Aristolochia Serpentaria, Aristolochia sipho, Chironia angularis, Hydrastis Canadensis, Populus balsamifera, Liquidambar Styraciflua, Datura Stramonium, Cicuta maculata, Rhododendron maximum, Kalmia latifolia, Gaultheria procumbens, Laurus Sassafras, Laurus Benzoin, Laurus Borbonia, Eryngium aquaticum, Arum triphyllum, Dracontium fœtidum, Rhus radicans, Rhus Vernix, Rhus Toxicodendron, Polygala Senega, Polygala sanguinea, Zanthoxylum fraxinifolium, Zanthoxylum Clava Herculis, Euphorbia Ipecacuanha, Spiræa trifoliata, Spiræa opulifolia, Asarum Canadense, Eupatorium perfoliatum, Sanguinaria Canadensis, Triosteum perfoliatum, Asclepias decumbens, Convolvulus panduratus, Podophyllum peltatum, Cassia Marilandica, Iuglans cineria, Lobelia siphilitica, Lobelia inflata, Serratula spicata, Ilex vomitoria, Spigelia Marilandica, Chenopodium anthelminticum, Helleborus fœtidus, Galega Virginiana, Cleome dodecandra? Silene Virginica, and Melia Azedarach*.

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* This last is the only foreign vegetable in the whole list. The Zea Mays and the Zizania aquatica are the only two vegetables that are not medicinal, in the strict sense of the word.

PREFACE*.

I HOPE the following pages will be received as an earnest of my desire to extend our knowledge of the medical properties of the indigenous vegetables of the United-States. I do not expect to acquire any reputation by the publication. Perhaps, in making this assertion, I shall not be doubted, when I confess that in every thing which I have hitherto published, I have had reputation in view. If I have not acquired it, I have borne the disappointment with tranquil indifference.

THE readers of these *Collections* (for every thing that is written and published solicits some readers) will form different opinions about my medical faith. Some of them will think I have too much ; and others that I have not enough. I certainly do not repose implicit confidence in the half of what is said concerning the powers of medicines. Accordingly, I have not given a place, in these pages, to many of our vegetables, which have been praised as specifics for the cure of diseases ; in particular, as specifics against the bites of venomous serpents. But, on the other hand, it will be asked, whether I mean that all the different vegetables which I have mentioned, should have a place in the

* To the First Edition.

materia medica of physicians? I answer, No. BUT HOW ARE WE TO KNOW WHAT PLANTS ARE MOST PROPER FOR THE PURPOSES OF MEDICINE, UNTIL WE SHALL HAVE EXAMINED THE PROPERTIES OF A GREAT BODY OF VEGETABLES? The Digitalis is now thought one of the most important of the diuretic medicines: but, perhaps, future inquiries will discover a diuretic, which shall, in a great measure, supersede the frequent use of this active plant. I WISH TO TURN THE ATTENTION OF OUR PHYSICIANS TO AN INVESTIGATION OF THE PROPERTIES OF THEIR NATIVE PRODUCTIONS. When it is considered how little has hitherto been done in this way, every attempt (mine is an humble one) should be candidly received. I do not mean that its faults should not be pointed out.

THE arrangement of the articles which I have mentioned is by no means faultless: on the contrary, it is liable to many objections. I should not have followed this arrangement, had I been considering *all* the articles of the materia medica. I shall give a sketch of my ideas of a method of the science, in my strictures on the arrangement of the learned and elegant author of the *Botanic Garden*, a poem which unites the fire of Lucretius with the taste of Virgil, and a learning unequalled by that of Camoëns or of Milton.

I THINK it but candid to confess, that since reading this address to the Medical Society, I have made some alterations in it. These alterations, however, are very inconsiderable. In general, even the very style and faults of each phrase are preserved, for I had not time to alter or correct much. I have left out the concluding part of the address, relative to the establishment of

a MEDICAL LIBRARY: not that I doubt the ability of the society to form a library of its own. The notes contained in the Appendix were not read to the society.

WHATEVER may be the reception of this essay by the public, whether favourable or unfavourable, I shall pursue my inquiries concerning the nature and properties of the natural productions of my native country. I shall pursue them, because there is at least a possibility that they may ultimately tend to something useful: and because I have the experience of several years to teach me, that the cultivation of science is the extension of my happiness.

ERRATA, &c.

Page 8, *for* diarrhoes, *read* diarrhoeas.
—— 10, *for* gonorrhea, *read* gonorrhoea.
—— 47, *for* thirty, *read* thirty-two.

COLLECTIONS

FOR

AN ESSAY

TOWARDS A

MATERIA MEDICA

OF THE

UNITED-STATES.

READ BEFORE THE PHILADELPHIA MEDICAL SOCIETY,
ON THE TWENTY-FIRST OF FEBRUARY, 1798.

By BENJAMIN SMITH BARTON, M. D.
ONE OF THE HONORARY MEMBERS OF THE SOCIETY.

"Sunt Simplicia desumpta e triplici Naturæ Regno: e Lapideo, Vegetabili
"& Animali; heic VEGETABILIA tantum depromsi, quæ maximam constituunt
"Materiæ Medicæ partem, alio tempori reservans cetera." LINNAEUS.

FIDEM NON ABSTULIT ERROR.

"Medicus NOTITIA PLANTAE destitutus, de viribus
"ejusdem nunquam juste judicavit."

LINNÆUS.

COLLECTIONS, &c.

GENTLEMEN,

WE have assembled together to celebrate the anniversary of our foundation. It is an occasion which ought to give pleasure to us all. We have met, however, for the difficult purpose of mingling science with pleasure. This difficulty falls peculiarly upon me. By your vote, I have been called upon to deliver the annual discourse. I accepted of the appointment cheerfully, because I was anxious to demonstrate my attachment to the Society, of which I had the honor to be a member at a very early period of my life; a Society in which I first imbibed my love of the different sciences which constitute the great fabric of medicine.

BUT if I accepted of the appointment with pleasure, I do not address you with confidence. I have found it difficult to select a subject for your entertainment. I, at one time, contemplated a comparative view of the different theories which have prevailed in medicine, in the present century. But I soon found this subject too extensive for our purpose: besides, in the investigation of this view, I should have been obliged to speak with

a freedom, which might not have given pleasure to every one of us. Men are often attached to theories, as parents are attached to their children.

After some difficulty, I have selected a subject. It is *An Essay towards a Materia Medica of the United-States*; or, if you please, An Inquiry what indigenous vegetables of our country may be used, with advantage, in the treatment of diseases. This, you will immediately perceive, is a task both extensive and difficult. But it is an important one. I shall not, perhaps, perform a duty altogether unacceptable to you, if I furnish you with a few facts not generally known to you before. This is all I aim at.

Mine is not the first attempt of this kind. Besides the paper entitled *Specifica Canadensium*,* Dr. Schoepf, of Erlangen in Germany, has favoured us with a specimen of such a work, under the title of *Materia Medica Americana potissimum Regni Vegetabilis*. This work was printed in 1787. The author arranges the articles according to the sexual system of Linnæus. This, though an objection, is not the greatest. He has given us nothing from his own experience. He ascribes active powers to plants which are nearly inert, and appears to me to be, in some measure, governed by the old notion of *Signatures:* one of the tyrants of the ancient schools. He discovers none of that infidelity, or, if you please, scepticism, which ought ever to be attached to physicians: I mean not an infidelity relative to religion; but an unwillingness to acquiesce, without good proofs, in the truth of every tale concerning the powers of medicines. This pliant, this credulous disposition, has been

* See Amoenitates Academicæ. Vol. iv. Dissertatio lxxii.

one of the causes which have obstructed the regular march of medical science. But as the effort of Schoepf is the best of the kind, so we ought to tread lightly on his work. He is at least a man of learning; and learning should always claim indulgence from the lovers and cultivators of science.

I AM far from supposing that it is in my power, especially on this occasion, to supply all the defects of Schoepf's book. It would be easy to point out its faults. I aim at a rude sketch of our materia medica. It is so extremely unfinished, that I have no objection to its being called by any inferior name. I confine myself entirely to vegetables.

MATERIA ALIMENTARIA.

YOU are all acquainted with the great general division of the materia medica into two parts: that which relates to the aliments, or *nutrientia*, of mankind, and the medical part, more strictly so called. Each of these is highly important; but I mean, in this address, to confine myself almost entirely to the latter branch. Yet the former should claim some of our attention. Much may be expected from a country which has blessed us with the maize, the potatoe, &c. I could readily furnish you with a long list of the indigenous nutrientia of this country; but such a list would be very uninteresting. On this subject, however, an useful work might be written. He who shall undertake to examine the subject extensively will find, that Providence has, in the gift of esculent vegetables, been as liberal to the countries of the United-

States, as to any other countries of the world, of equal extent.

Under this head of the nutrientia, I shall content myself with mentioning two native articles, which deserve the attention of physicians and others. Perhaps, they may even supercede, on many occasions, the use of some other articles, which are purchased at a pretty dear rate.

There grows upon the river Mobile a species of Palm, which is but little known to naturalists, but which promises to be an important article of food to man. It has no stalk or stem above ground. The leaves spread regularly all round, and when fully expanded are flabelliform. In the centre of these leaves, is produced the receptacle of the fruit, which is of the form and size of a common sugar-loaf. This receptacle consists of a vast number of drupes, or berries, of the size and shape of common plumbs: each is covered with a fibrous, farinaceous, pulpy coating, of considerable thickness. This substance is said to resemble manna in texture, colour and taste; or, perhaps, it still more resembles moist brown sugar, with particles of loaf-sugar mixt with it. It is a most delicious and nourishing food, and is diligently sought after in the places where it grows. Upon first tasting it, it is somewhat bitter and pungent.*

The large tuberous roots of the Smilax China afford our southern Indians a nourishing food. The fresh roots are well macerated in wooden mortars. The mass is then put into vessels nearly filled with clear water, where it is well mixed with paddles. It is decanted off into other

* From the information of Mr. William Bartram. MS. *penes me.* Vol. i.

vessels, where it is left to settle, and after the subsidence is completed, the water is cast off, leaving the farinaceous substance at the bottom. When this is taken out and dried, it is an impalpable powder of a reddish colour. Mixed with boiling water, it becomes a beautiful jelly, which, when sweetened with honey or sugar, affords a most nourishing and pleasant food for children or aged people. The Indians sometimes use it mixed with fine corn-flour, and fried in fresh bear's oil.*

The chemical history of the Maize, or Indian corn, the blessing of our country, deserves to be farther investigated. Its importance as an article of diet is sufficiently established by the experience of whole nations.

MATERIA MEDICA.

I AM not very anxious, on this occasion, about my division of the materia medica. I have attempted, in my lectures, to make some improvements upon the arrangement of Dr. Cullen; and, if I live, I hope to publish, in a few months, my strictures on the late arrangement of the ingenious Dr. Darwin. At present, in possession of only a small collection of original facts, immediately relative to the materia medica of the United-States, I shall content myself with disposing of these facts under the nine following heads, viz. I. Astringents; II. Tonics; III. Stimulants; IV. Errhines; V. Sialagoga, or Salivating medicines; VI. Emetics; VII. Cathartics; VIII. Diuretics; IX. Anthelmintics.

* From the information of Mr. William Bartram. MS. *penes me.* Vol. i.

Section I. Astringents.

I think it proper, in the present state of our knowledge of medicines, to give place to a class of Astringents. There is the more propriety for the adoption of such a class, because we see more readily, than with respect to many other medicines, their direct mode of operation. Our vegetable astringents, I mean the purer and more unmixed astringents, are numerous. The barks of all our oaks are of this kind. But I may here particularly mention three or four native astringents, which seem to be more especially entitled to your attention.

The first is the Geranium maculatum, or Spotted Geranium,* which grows very plentifully about this city: it flowers in the spring. The root is used: this boiled in milk has been found an excellent medicine in the cholera of children. It is not necessary to be very nice about the dose. I imagine it would also prove useful in old diarrhoes, where the kino, and other astringents are exhibited. If nephritis, of certain kinds, be relieved by astringents, this geranium would seem entitled to attention, not merely because it is a powerful astringent, but because a species of the same genus, the Geranium robertianum, or Herb-Robert, has been employed, with advantage, in this distressing complaint†.

* In the county of Lancaster, and probably in other parts of Pennsylvania and the United-States, this plant is known by the English name of "Crow-foot." It is hardly necessary to say, that this name is improperly applied to this or any other species of the family of Geranium: for it has, long since, been appropriated to the different species of the genus Ranunculus. The name of Crow-foot is also bestowed, in some parts of Pennsylvania, upon a species of Geum, or Bennet, the Geum rivale, or Red Water-Avens.

† The Geranium robertianum is a native of various parts of North-America.

The Heuchera Americana is the next astringent. This is sometimes called American Sanicle. It is more commonly called Alum-root. The root is a very intense astringent. It is the basis of a powder, which has lately acquired some reputation in the cure of cancer. I suppose all its virtue, in this case, depends upon its astringency. I may here observe, that the disease of cancer is not confined to civilized nations. It is known among our Indians. I am informed, that the Cheerake cure it with a plant, which is thought to be the Hydrastis Canadensis, one of our fine native dies. I do not believe that the Heuchera has cured genuine cancer: but it seems certain, that it has proved very beneficial in some obstinate ulcers, which have been mistaken for cancer. In such cases, the astringent medicines are too much neglected.

The Actæa racemosa, or Black Snake-root, is also a valuable medicine. It is sometimes called Squaw-root*, I suppose from its having been used as a medicine by our Indians. The root of this plant is astringent. In a putrid sore-throat, which prevailed in Jersey, many years ago, a strong decoction of the roots was used, with great benefit, as a gargle. Our Indians set an high value on it. A decoction of it cures the itch. In North-Carolina, it has been found useful, as a drench, in the disease of cattle, called the murrain.

The Uva Ursi† is considerably astringent. Yet I suspect that it does not operate entirely by virtue of its astringent quality. This plant, from my own experience, I can recommend to you, as a most valuable medi-

* It is also called Rich-weed, and Rattle-weed.

† Arbutus Uva ursi of Linnæus.

cine. It should be in the hands of every physician. I have used it, with advantage, in old gonorrhea. But its great virtue is that of a medicine in nephritis. I am inclined to think, that it is peculiarly adapted to cases of what I call nephritis podagrica, or nephritis depending upon gout. This is one of the plants which are common to the old and to the new world. It grows plentifully in Canada, New-York, New-Jersey, &c. Schoepf says, the Indians mix the leaves with tobacco*.

The Liquidambar asplenifolium† of Linnæus is well known by the name of Sweet-Fern. It has often been found useful in diarrhoea. Other virtues havebeen ascribed to it‡.

Section II. Tonics.

I believe all the astringent medicines are more or less Tonic. But there are a good many tonics which are not astringent. There is, certainly, some propriety in considering the astringents and tonics under two distinct heads, as Dr. Cullen has done. But, perhaps, the tonics should only form one section of the great class of stimulants. Certain it is, that many of the tonic medicines are considerably stimulant.

The class of tonics is extremely interesting to physicians. It embraces some of the most valuable medi-

* Materia Medica Americana, &c. p. 68.

† Comptonia asplenifolia of Aiton.

‡ See Schoepf's Materia Medica, &c. p. 142.

cines with which we are acquainted, such as the Peruvian bark, the extensive tribe of bitter medicines, as the Gentians, &c. The natural infirmities of mankind, and perhaps especially the vices to which civilized nations are so propense, will always render the tonics most necessary implements in the hands of physicians.

Our woods possess several medicines which, I am inclined to think, might be used, with advantage, as substitutes for the Peruvian bark. Perhaps, most of our Oaks, which are, in general, different from the oaks of the old world, are of this kind. Sufficient trials have not been made with them; at least *internally* used. *Externally*, some of them have been employed, with advantage. I have used the bark of the Spanish oak* in gangrene, and I had every reason to think it was, in this case, equal in power to the best Peruvian bark. The bark of the Prunus Virginiana, or Wild-Cherry-tree, has been used in intermittent fevers, and found useful. This is a very common tree. Its leaves are poisonous to certain animals, as calves. Even the berries intoxicate different kinds of birds. The barks of the Common Sassafras (Laurus Sassafras), and Persimmon (Diospyros Virginiana) have likewise been found useful in intermittents. In the year 1793, I used the bark of the last of these vegetables in an ulcerous sore-throat†. Our Willows have not been attentively examined. We have several native species, and I believe they possess nearly the same properties which have been ascribed to the willows of Europe‡, by Stone, Haller, and other writers. The Dog-

* Quercus rubra montana of Marshall. See his Arbustum Americanum: the American Grove, &c. p. 123. Philadelphia: 1785.

† Dr. Woodhouse has favoured us with some interesting information concerning the Persimmon. See his Inaugural Dissertation. Philadelphia: 1792.

‡ Particularly the Salix alba, Salix pentandra, Salix latifolia, &c.

wood is a genus which seems well worthy of attention. Of this, the Cornus of the botanists, there are several species in North-America. The most common is the Cornus florida, or Common Dogwood*. I find this in every part of the United-States. It is one of our most beautiful shrubs. It flowers early in the spring, and with so much regularity, that some of our southern tribes were accustomed to name the spring-season from its flowering. The bark is considerably astringent. It has long been employed in intermittent fevers. A decoction of it has also been employed, and found very useful, in a malignant fever, called the yellow-water, Canada-distemper, &c. which, within the last eight years, has carried off great numbers of the horses in the United-States. The ripe fruit, or berries, infused in spirit or brandy, make an agreeable bitter. Our Indians employ an infusion of the flowers in intermittents. The same infusion has been much recommended by some in flatulent cholic. I have used it as a tea.

The Cornus sericea, another species, is called Red-Willow and Rose-Willow; which are very improper names. The bark of this is often mixed with tobacco, and smoken by the savages. It has been found but little inferior to the common pale Peruvian bark, in intermittent fevers. This species grows in wet places, on the sides of rivers, creeks, &c. and flowers in August and September. I know nothing of the medical properties of the other native species of this genus; viz. Cornus Canadensis, Cornus circinata, &c.

Many years ago, Zannichelli, and of late, Cusson and other writers, recommended the bark of the Æscu-

* Dogwood is the most common American name of this species. In some of the New-England States, it is known by the name of Box-wood.

lus Hippocastanum, or Common Horse-Chesnut, as a substitute for the Peruvian bark. This Æsculus is not a native of America, though it thrives very well in the open ground of Pennsylvania, &c. But we have at least two native species of the same genus within the limits of the United-States*. Whether the barks of these possess the properties which have been ascribed to the Hippocastanum, I do not know. They deserve to be examined.

I MUST not omit to mention, under this head, the Magnolias. Of this fine genus, we have at least six species, viz. the Magnolia glauca, the acuminata, the tripetala, the grandiflora, the auriculata, and the Fraseri†. I believe they all possess nearly one general assemblage of properties; but of this I am not quite certain. The species that is best known to me is the glauca, commonly called Magnolia, Beaver-tree, and Swamp-Sassafras. The bark of this is an agreeable aromatic, tonic, bitter medicine. It has been used in intermittent fevers. The flowers have a powerful, and to most persons an agreeable, smell. It is an emanation which must be considered as a potent stimulant, or incitant. I am well acquainted with a physician in whom the newly-expanded flower evidently increased the paroxysm of a fever, which came on every afternoon; and also increased the pain of inflammatory gout. This is an interesting fact. In Virginia, a spirituous tincture of the cones, or seed-vessels, of the Magnolia acuminata, which is commonly called Cucumber-tree, has been used, and we are told very advantageously, in

* Æsculus Pavia of Linnæus, and Æsculus flava of Aiton.

† Perhaps, the Magnolia auriculata of Bartram and the Magnolia Fraseri of Walter are merely varieties of the same species.

rheumatic complaints*. The bark of the root of the Magnolia grandiflora, sometimes called Tulip-tree, is used in Florida, in combination with the Snake-root, as a substitute for the Peruvian bark, in the treatment of intermittent fevers. The flowers of the Magnolia tripetala, or Umbrella-tree, have a very powerful smell. They often induce nausea and head-ache.

I AM inclined to think, that the Cortex Angusturæ, which has lately been introduced into medical practice, and is so greatly celebrated as a tonic, by the practitioners of Britain, is the bark of some species of Magnolia.

THE Liriodendron Tulipifera, well known, in the United-States, by the names of Tulip-tree, Poplar, White-wood, &c. is very closely allied, by its botanical character, to the Magnolias. They both belong to the same class and order of the sexual system, and both, I believe, possess nearly the same properties. The bark of the Liriodendron is frequently used in intermitents. Many persons are of opinion, that in this case, it is but little inferior to the Peruvian bark. I have never employed it†.

THE bark of the Populus tremula? or Aspin? has likewise been used in cases of intermittent fevers. This is a powerful tonic, and deserves the attention of the American physician. It has been found very useful, as a stomachic, in the diseases of our horses.

* See Dr. Duncan's Medical Commentaries, for the year 1793. Vol. xviii. p. 445.

† For some information concerning the medical properties of the Liriodendron, I must refer my readers to a short paper, by Dr. Rush, in the Transactions of the College of Physicians of Philadelphia. Vol. I. Part. I. p. 183—185. Philadelphia: 1793.

The Snake-root, the Aristolochia Serpentaria, is one of the more stimulating tonic bitters. It is certainly a valuable medicine, in the second stage of certain fevers, after the inflammatory diathesis has been removed. It was used, with great benefit, in a most malignant fever, attended with carbuncles, which prevailed at Bristol, on the Delaware, in this state, in the years 1749 and 1753. Another species of this genus, the Aristolochia sipho of L'Heritier, grows in the neighbourhood of Pittsburgh, and in other parts of the United-States. This is a large, climbing plant. The root has a pungent, aromatic taste, and for certain purposes is, perhaps, preferable to the common Snake-root.

I shall conclude this subject of tonics by observing, that we possess a good many of the bitter plants of Europe, which have long claimed the attention of physicians. Our Gentians have not been carefully examined. We have one species which appears to be equal to any of the officinal kinds yet known.

Section III. Stimulants, or Incitants.

The class of Stimulants, or Incitants, is so very extensive, that in order to exhibit a methodical or natural medical arrangement of these articles, it would be necessary to consider them under a number of different heads, or sections. But this, in such a sketch as I offer you, does not appear necessary. I shall content myself, therefore, with speaking of a few of our native

stimulant vegetables, under the two heads of such as are more general, and such as are more partial, or topical, in their operation.

§ I. General Stimulants.

I think that many of our different balsamic products may, with propriety, be considered under the head of general stimulants, though they are certainly not the most diffusible articles of this class. Such is the resin of the Populus balsamifera, called Balsam, or Tacamahaca-tree. This is a native of North-America and of Siberia. The resin is procured from the leaf-buds. This balsam is so very penetrating, that it communicates its peculiar smell and taste to the flesh of certain birds, which feed upon the buds. It was formerly supposed, that the Tacamahaca of the shops was the produce of this tree. But it seems more probable, that it is the produce of the Fagara octandra*.

The gum-resin which exudes from the Sweet-gum, or Maple-leaved Liquidambar-tree, the Liquidambar Styraciflua of Linnæus, deserves to be mentioned. The storax of the shops is thought to be the produce of this tree: but, perhaps, this point is not yet

* The Fagara octandra is a small tree, which grows spontaneously in Curaçoa, and other West-India Islands, and also (according to Sonnerat) in the Isle of France, in the East-Indies.

quite ascertained*. I am informed, that the produce of our tree has been used, with advantage, in diarrhoeas. Some of our southern Indians mix the dried leaves with tobacco, for smoking.

To the head of stimulants I have no hesitation in referring a number of poisonous vegetables, with the properties of which we are not so well acquainted as we ought to be. Such are the Datura Stramonium, or James-town-weed, the Cicuta maculata, &c.

The Datura is one of our most common plants. It is certainly a medicine possessed of useful powers. The properties of this vegetable have lately been more satisfactorily investigated by one of our members, Dr. Samuel Cooper.

We have several native plants of the natural order *umbelliferæ*. That described by the late Dr. James Greenway†, under the name of Cicuta venenosa, should be carefully investigated. This, from his account, must either be a direct sedative, or a stimulant, whose first operation is very soon accomplished. It kills without inducing pain or convulsions. Perhaps, the plant with which some of our Indians, when weary

* It is more probable, perhaps it is certain, that the storax is the produce of the Styrax officinale, a tree which grows spontaneously in Italy, the southern parts of France, Aethiopia, and other countries of the old world. It is also said to be a native of the southern parts of the United-States. This, I think, is very doubtful. There are, however, in the United-States at least two indigenous species of the genus Styrax, viz. the Styrax grandifolium and Styrax lævigatum of Aiton. Of the medical properties of these, I know nothing.

† See Transactions of the American Philosophical Society. Vol. III. No. xxix. In Virginia, this plant is called Wild-Carrot, Wild-Parsnip, Fever-root, and Mock-Eel-root.

of life, destroy themselves, is the same. It grows in meadows, and has a root like a parsnip.

Before I take leave of these poisonous plants, I may mention some others, whose properties are but little known. The first is the Rhododendron maximum, or Pennsylvania Mountain-Laurel. This is certainly a poison. It is a species of the same genus as the Rhododendron Chrysanthum, which has lately acquired much reputation in the cure of chronic rheumatism*.

Nearly allied to the Rhododendron is the genus Kalmia. Of this we have several species, and all of them are poisons. The Kalmia latifolia, or Broad-leaved Laurel, is best known to us. It kills sheep and other animals. Our Indians sometimes use a decoction of it to destroy themselves. In the county of Lancaster, an empiric has used the powdered leaves, with success, in certain stages of fevers, and in tinea capitis. A decoction of the plant, externally applied, has often cured the itch; but it must be used with great care, for thus applied it has been known to occasion disagreeable subsultus, or startings, and convulsions. I have given the powder of this plant internally in a case of fever, and have thus, at least, ascertained, that it may be used with safety.

* The Rhododendron Chrysanthum is a fine shrub, which grows spontaneously upon the summits of the mountains in the neighbourhood of the river Jenisea in Asia; upon the mountains about the lake of Baical; through the whole of the country of Eastern Siberia; in the Peninsula of Kamtschatka, and in Behring's island, between the continents of Asia and America. It is not improbable (as Asia possesses so many vegetables and animals in common with North-America), that this species of Rhododendron will also be found native within the limits of the latter continent; perhaps upon some of the great ranges of mountains in the United-States. Upon the Cheerake-mountains, in North-Carolina, my friend Mr. William Bartram discovered a beautiful new species of Rhododendron, which he has named Rhododendron aromaticum. It is the Rhododendron punctatum of Willdenow.

The medical properties of our different species of Andromeda and Azalea, which, in botanical character, are very nearly akin to the Rhododendron and Kalmia, are but little known to me. I have long suspected that they are poisons. A decoction of the Andromeda Mariana has been found useful, as a wash, in a disagreeable ulceration of the feet, which is not uncommon among the slaves, &c. in the southern states.

The Gaultheria procumbens, which we call Mountain-tea*, is spread very extensively over the more barren, mountainous parts of the United-States. It belongs to the same class as the plants just mentioned. I have made use of a strong infusion of this plant, which is evidently possessed of a stimulant and anodyne quality. I am told it has been found an useful medicine in cases of asthma. But I have not learned to what particular forms of this disease it is best adapted, nor in what manner it operates.

Our native species of Laurus deserve to be investigated. The Camphor and the Cinnamon belong to this genus: but, hitherto, they have not been discovered within the limits of the United-States. The properties of the Common Sassafras, which is a species of Laurus, have not been sufficiently examined. It is the Laurus Sassafras of the botanists. I have already mentioned the bark. Its oil seems to be an useful medicine. I have been assured, that this oil has been found an efficacious remedy, externally applied, in cases of wens. This looks probable; for our medicine is nearly allied to camphor,

* It is also called Berried-tea, Grouse-berry, and Deer-berries. If I do not mistake, this is one of the principal articles in the materia medica of some of our Indian tribes. In the language of some of the Indians of Canada, it is called *Pollom.*

which has been used with advantage in bronchocele* I knew a woman in whom an infusion or tea of the root of the Sassafras always induced an oppression at breast, with sighing, and depression of spirits.

During the late American war, necessity drove the inhabitants, in many parts of the United-States, to seek for a substitute for some of the spices to which they had been accustomed. They used the dried and powdered berries of the Laurus Benzoin, which we call Spice-wood, and Wild-Alspice-bush, and found them a tolerable substitute for alspice.†

The celebrated Ginseng, or Panax quinquefolium, may, with propriety, be thrown into the class of stimulants‡. I find it difficult to speak of this plant with any degree of certainty. If it were not a native of our woods, it is probable that we should import it, as we do the teas of China and Japan, at a high price.

The Eryngium aquaticum, or Water-Eryngo, is one of the stimulants which more especially act as sudorifics. It is nearly allied, in its qualities, to the contrayerva of the shops. It is one of the medicines of our southern Indians. They use the decoction.

* The oil rubbed upon the head has been found very useful in killing lice. The bark, especially that of the root, powdered and mixed with pomatum, has the same effect.

† "A decoction of the small twigs makes an agreeable drink in slow fevers, "and is much used by the country people. It is said the Indians esteemed it highly "for its medicinal virtues." Reverend Dr. M. Cutler.

‡ The Ginseng is by no means a powerful stimulant. It is not very happily arranged in the class of *Medicamenta Stimulantia*, or *Incitantia*. The Indians make use of a tea prepared of the leaves as well as the root of this plant. But I cannot learn, that they so highly esteem the Ginseng as their Tartar brethren in Asia do.

Among the more acrid stimulants of our country, I may mention the Arum triphyllum, or Indian-Turnip, as it is most commonly called. I could wish that the properties of this plant were examined with attention. The leaves of a plant a good deal allied to this, I mean the Dracontium pertusum of the botanists, are employed, by the Indians of Demerara, in a very singular manner, in the treatment of general dropsy. The whole body of the patient is covered with the leaves. An universal sweat, or rather vesication, is induced, and the patient often recovers. Perhaps, it would be worth trying this practice in cases of anasarca, which have resisted the usual modes of treatment*.

* This fact was communicated to me by my friend, the late Mr. Julius Von Rohr, a gentleman whose death is a real loss to natural science, and perhaps an irreparable loss to the interests of an injured and oppressed part of mankind: I mean the Blacks. In the summer of 1793, I took my last adieu of this learned botanist, and most amiable man. He sailed, from New-York, for the coast of Africa, where he contemplated the establishment of a colony of Blacks. A few days after he had landed on the African continent, he died of a malignant fever. With him, I fear, has perished, for a long time at least, one of the best concerted schemes for the safe and happy emancipation of the swarthy children of Africa. Von Rohr was another Howard. In benevolence and good sense, he was, at least, equal to the great English philanthropist. In science certainly, and perhaps in the simplicity of his conduct, and the unambitious fervour of his zeal, he was his superior. Of all the men I have ever known, he appeared to me to be most eminently entitled to the character of a Practical Christian. Mr. Von Rohr was a native of Denmark. I hope his countrymen will do justice, if they have not already done it, to his great merits. It is the vice of ingratitude, it is even criminal, to suffer so much disinterested goodness, as inhabited the bosom of my friend, to sleep, neglected, in the grave. Happy should I esteem myself, if I could hope, that this feeble, this retired tribute to the memory of one of the best of men, might lead those who knew him long and well, to do *all* justice to his virtues. With his merits in science, no man was better acquainted than the learned Professor Fabricius.

§ II. Topical Stimulants.

By the topical stimulants, I mean those articles which more especially increase the action or living powers of the parts to which they are applied, and which, at the same time, generally produce a discharge of fluid from the part. The Cantharis is one of these articles: but of this, as an animal body, and not a native, I have nothing to say*.

The bark of our White-Walnut, or Butternut, the Juglans cinerea of Wangenheim, is a pretty efficacious blister. The bark of the root is more powerful than that of the stem or branches. It has been applied, with advantage, as a blister, to the bite of some of our venomous serpents†.

I believe the bark of our Moosė-wood, or Leather-wood, the Dirca palustris of Linnæus, is also a blister. This plant, by its botanical habit, is nearly allied to the genus Daphne, all the species of which are blisters; especially the Daphne Gnidium.

Some of our Indians make use of a plant, which, when mashed a little, induces nearly as good a blister

* The United-States, rich in the articles of the materia medica, furnish us with several species of insects, which may be employed as valuable substitutes for the cantharides of the shops. It is my intention to publish a particular account (illustrated with coloured engravings) of these insects. It may not be amiss to observe, in this place, that the species commonly called "Potatoe-Fly," which is now much employed (and which I have often employed) as an epispastick, is the Lytta vittata of Fabricius: the Cantharis vittata of Olivier. Besides this, there are, in the United-States, several other species of the genus Lytta, one of which, in particular, (the Lytta marginata of Fabricius, the Cantharis marginata of Olivier,) is eminently entitled to the attention of American physicians.

† See Transactions of the American Philosophical Society. Vol. III. p. 102, 105, 114.

as the cantharides. It has been used with advantage in sciatica. I do not know this plant.

The Ranunculus sceleratus, or Celery-leaved Crowfoot, is a very acrid plant. If it be bruised, and laid upon any part of the body, it will, in a few hours time, raise a blister. This plant is a native of Europe and of America. The Ranunculus bulbosus, called Bulbous Crowfoot, and Butter-cups, possesses the same properties. This plant grows very plentifully in our meadows and fields; but I believe it is not a native.

To this head of topical stimulants, I may refer several species of the genus Rhus, or Sumac; particularly the Rhus radicans, or Poison-vine; the Rhus Vernix, or Vernice-tree; and the Rhus Toxicodendron, or Poison-oak. In many persons they induce a peculiar and very troublesome vesication, which I have frequently removed, in a short time, by means of a mercurial wash. These plants are more active in the southern than in the northern climates. They more readily poison immediately after than before a full meal. Their stimulant effect is extended beyond the skin. It is said that the bark of one species (but I cannot tell you what species) has been found useful in intermittents.

Section IV. Errhines.

I have but little to say under the head of Errhines, or Sternutatory Medicines. Our native

vegetables of this class, with the exception of the Tobacco, are but little known to me. Of the Tobacco, as being so well known to you all, I need say nothing.

The brown powder which is attached to the footstalks of the leaves of the Andromeda, the Kalmia, and the Rhododendron, formerly mentioned to you, is considerably errhine. The powder about the seeds, in the seed-vessels of the same vegetables, possesses a similar quality. Whether this powder may be advantageously employed in practice I cannot say.

We have many native species of the genus Euphorbia, or Spurge. There can be little doubt, that some of them are sternutative*.

Section V. Sialagoga.

The number of Salivating Medicines is, I believe, much greater than has been commonly imagined. Perhaps, there are but few of the Incitant medicines which may not be so managed as to salivate. Opium, camphor, and hemlock† all induce salivation‡.

* The leaves of the Asarum Canadense are errhine.

† Conium maculatum.

‡ There are many well-attested instances of the salivating power of these three medicines. Hemlock, in particular, has been observed to produce this effect. I have seen, in a case of mania, a pretty extensive salivation induced by camphor. The patient, who had long been ill, was completely cured. This case occurred, under my care, in the Pennsylvania Hospital.

I am but little acquainted with our indigenous salivating vegetables. The Seneca Snake-root has, long since, been observed to possess this property*.

The Zanthoxylum Clava Herculis, or Tooth-ach-tree, is a very powerful stimulant. Applied to the mouth and internal fauces, it occasions a copious flow of saliva. By this property, it appears to be a good deal allied to the Pyrethrum, Cochelaria, &c. I am informed that our plant is not merely an external sialagogue, but that even when taken into the stomach, it exerts its effects upon the salivary glands. I speak of the bark of the plant: but the seed-vessels have the same property. This medicine has been given internally in cases of rheumatism.

Section VI. Emetics.

Among the indigenous vegetables of our country, there are several which are entitled to your attention as Emetics. Such are the Euphorbia Ipecacuanha, the Spiræa trifoliata, the Asarum Canadense, &c.

The first of these, the Euphorbia Ipecacuanha, like all the species of the genus, is an extremely active plant†. It is employed as an emetic by some of the coun-

* In a case of hydrothorax (complicated with anasarca), that came under my own notice, the patient, a lady about fifty years of age, was very profusely salivated by the use of a strong decoction of the Seneca.

† This species of Euphorbia, or Spurge, grows spontaneously in various parts of the United-States. In the state of Jersey, within a few miles of Philadelphia, it is pretty common, growing in the dry and sandy soil. It flowers early in the spring. It is the root which is employed.

try-people. I do not know the dose. I suppose it is small, for it belongs to the head of drastic emetics. I am not certain that it would be a valuable addition to the materia medica; but, perhaps, it would. There are many cases in which we have occasion to make use of immediate and active emetics; as when certain poisons, such as laudanum, &c. have been swallowed. In such cases it may, possibly, be of much use.

I CAN speak with more confidence of the Spiræa trifoliata. This is a shrub, which grows very plentifully in various parts of the United-States. It is one of the few active plants of the class *Icosandria*, to which it belongs*. The root, which is the part made use of, like that of the officinal ipecacuanha, consists of a cortex or bark, and a ligneous or woody part. The active power of the root seems to reside exclusively in the bark. It is a safe and efficacious emetic, in doses of about thirty grains. Along with its emetic, it seems to possess a tonic, power. It has, accordingly, been thought peculiarly beneficial in the intermittent fever; and it is often given to horses to mend their appetite. This plant has a number of different names, such as Ipecacuanha, Indian-Physick, Bowman's root, &c.

WE have several species of the genus Asarum, or Asarabacca. I am best acquainted with the Asarum Canadense, which is well known by the name of Wild-

* Linnæus thought it very remarkable, that a plant belonging, as this does, to the order of *Senticosæ*, should possess such active powers. "*Spiræam trifoliatam* Ipecacuanam vocant & vomitum facere dicunt, quod sane singulare esset in hoc ordine:" viz. *Senticosæ*. Caroli a Linne, M.D. *Prælectiones in Ordines Naturales Plantarum*. Edidit P. D. Giseke. p. 449. Hamburgi: 1792. But it might be shown, that other plants of the same natural order are considerably active. Not to mention others, it will be sufficient to observe, in this place, that the Spiræa Opulifolia, well known, in the United-States, by the name of Nine-Bark, is by no means an inert vegetable.

Ginger*. In Virginia, it is called Coltsfoot. Both the root and leaves may be used. The expressed juice of the fresh leaves is a powerful emetic.

Some of our Indians also prepare an emetic from the bark of a certain vine, which a good deal resembles the Celastrus scandens of Linnæus. This vine bears bunches of red berries of a sweetish taste, but of a poisonous nature. I know nothing of this plant from my own experience; but a gentleman† who has used it prefers it to every other emetic. The Indians make a decoction of the bark. A large dose is required to produce the effect. This is certainly an objection against its use.

A decoction of the Eupatorium perfoliatum, or Thorough-wort‡, is also emetic. I might have observed, that this plant is used by our Indians as a medicine in intermittent fevers.

The root of the Sanguinaria Canadensis** has been mentioned to me as an emetic. I know nothing particular of this property of the plant. I should have observed, under the head of general stimulants, that the seeds appear to possess nearly the same quality as the seeds of the Datura Stramonium.

* This has already been mentioned, as an errhine medicine. See page 24.

† Mr. John Heckewelder.

‡ In some of the New-England states, this plant is called Thorough-wax. This, like a very large proportion of the American names for plants, is misapplied. The Thorough-wax of the English is a species of Bupleurum, a plant, *toto coelo*, different from the Eupatorium perfoliatum.

** Called, in the United-States, Indian-Paint, Puccoon, Turmeric, &c.

I HAVE been assured, that the Six-Nations make use of at least twelve or fourteen different emetics. All of them, except the sulphat of iron, are vegetables. It is probable that the Spiræa Ipecacuanha, Euphorbia Ipecacuanha, &c. are among the number of these vegetable emetics.

I SHALL conclude this subject of emetics by recommending to your attention an examination of the properties of some of our native species of Viola, or Violet. I suspect it will be found, that the roots of some of these are endued with an useful emetic quality.

SECTION VII. CATHARTICS.

WE have many indigenous CATHARTICS. Some of them are well worthy of your attention. These may be divided into two kinds, the milder, and the more drastic.

AMONG the more mild, I may mention the Triosteum perfoliatum, sometimes called Bastard-Ipecacuanha. This, when given in very large doses, sometimes proves emetic ; hence the vulgar name. But I find it a good cathartic. The cortex, or bark, of the root is employed. I give it in doses of twenty and thirty grains. On some occasions, it has seemed to operate as a diuretic. But this may have been only an accidental circumstance. Rhubarb sometimes produces the same effect, as has been observed by C. Piso.

Nearly allied to the Triosteum, I mean in its properties, is the Asclepias decumbens. This is one of our most beautiful and common plants. It has received many vulgar names, such as Pleurisy-root, Flux-root, Butterfly-weed, &c. It has been much celebrated, especially in Virginia, as a remedy in dysentery. I have used it, and I think with advantage. I believe it does good principally by its purgative quality. The dose is from twenty to thirty grains of the root, in powder. A great deal has been said about the virtue of this vegetable in pleurisy.—The powder of this Asclepias is escarotic, and has been found useful in restraining fungous flesh in ulcers. I believe this, and not the Poke*, as has been supposed, is the plant which is employed by our southern Indians, in cases of venereal chancre.

The dried fruit of our Papaw, or Custard-apple, the Annona triloba of Linnæus, is likewise purgative. I can say nothing of it from my own experience.

I know nothing, from experience, of the *Mechameck*, or Wild-Rhubarb, of some of our Indians. It is, certainly, a species of Convolvulus, or Bind-weed, and I believe the Convolvulus panduratus†, which in Virginia is called Wild Potatoe. Its name, Wild-Rhubarb, implies that it is a purgative. An extract but little, if any thing, inferior to the Scammony of the shops, has been procured from one of our species of Convolvulus. One must have a good deal of *medical faith* to believe what Catesby has said concerning the remarka-

* Phytolacca decandra.

† It is, without doubt, the Convolvulus panduratus. This plant is called, in the state of Delaware, Wild-Potatoe-Vine; and the root Kussauder, or Kassader (which is a corruption of the word Cassada); Negroe names, I presume.

ble power of the Convolvulus purpureus, or Purple-Bindweed*.

More active than any of the native purgatives, which I have mentioned, is the Podophyllum peltatum of Linnæus. This is a very common plant through the whole of the United-States, and in other parts of North-America. It is known by a variety of names, such as May-apple, Mandrake, Ipecacuanha, Wild-lemons, &c. The fruit is esculent, and by many persons is thought delicious. The leaves are poisonous. It is the root which is used in practice. In doses of twenty grains, it is an excellent cathartic. It has some advantages over the rhubarb and jallap. It is most advantageously used in combination with calomel, or the crystals of tartar. I have heard much of the virtues of an extract prepared of this root; but have never used it.

There is a plant which was thought by Linnæus to be a species of the same genus. He called it Podophyllum diphyllum. I have shown, that it is a new genus†. I have not been able to collect a sufficient quantity of this to ascertain its powers; but, judging by the taste and smell, which it must be confessed are sometimes fallacious tests, I suspect its root possesses the virtues of the May-apple, or Podophyllum peltatum.

The Cassia Marilandica, one of our finest plants, belongs to the same genus as the senna of the shops. The American species possesses nearly the same virtues as the Eastern species. It is used as a purgative, in different parts of the United-States.

* The Natural History of Carolina, &c. Vol. 1. p. 35.

† See Transactions of the American Philosophical Society. Vol. III. No. xli.

An extract prepared from the inner bark of the Juglans cinerea, or Butternut-Walnut, has long been used as a purgative in the United-States. It is a valuable medicine. As it is often, however, very carelessly prepared by the country-people, it has gone into some kind of neglect. It ought to be prepared by the better informed apothecaries, and have a place in the Pharmacopœia of this country, WHEN SUCH A DESIDERATUM SHALL BE SUPPLIED. The dose of this extract is from ten to thirty grains. I have thought it possesses something of an anodyne property.

I HAVE been told, that some of our Indians use as a cathartic a decoction of the bark of the root of the Dirca palustris, or Leather-wood, already mentioned to you. Of this property of the Dirca I know nothing farther.

THE decoction or powder of the root of the Polygala Senega, or Seneca Snake-root, is also a purgative. Dr. Cullen, indeed, thinks its purgative is its most striking property, and therefore he arranges it under his head of cathartics*.

SOME of our native species of Iris, or Flag, are powerful cathartics. Such are the Iris versicolor, and the Iris verna. They are both used by our southern Indians†. I can say nothing certain concerning the dose of these vegetables. It is doubtless small, for they are

* "I have put it into the catalogue of purgatives, as this is the only operation "of it that is constantly very evident; and perhaps all its other virtues depend "upon this." A Treatise of the Materia Medica. Vol. II. p. 532. Edinburgh: 1789. 4to.

† Mr. William Bartram.

very active plants. Several of the European species of Iris are irritating cathartics.

A SPECIES of Croton, or perhaps of Stillingia, is used in the southern states, as a cathartic. It enters into the composition of a medicine which has acquired much celebrity in the cure of that hideous disease the Frambæsia, or yaws. This plant grows spontaneously on the dry, high lands of Carolina, Georgia, and Florida. It is called Yaw-weed, and Cock-up-Hat. The Stillingia sylvatica, perhaps the very plant I have been speaking of, is said to be a specific in the venereal disease*.

SECTION VIII. DIURETICS.

DIURETICS have so long been employed, with benefit, in the treatment of dropsies, that it becomes a matter of consequence to increase the number of the medicines of this class, and to learn how to exhibit, with more advantage, those which are already known. I do not mean by this observation to assert, that dropsies cannot be cured without the use of diuretic medicines. On the contrary, I am persuaded that they can, and often are, especially when the dropsy depends upon fever, or is connected with it. But, in the management

* Bernard Romans says, the Jallap grows wild near Pensacola, in West-Florida. Possibly, he has mistaken for it some other species of Convolvulus. The Ricinus communis, from which we procure that invaluable purgative medicine, the Castor-oil, grows wild, and in great abundance, upon the river St. John, in the Peninsula of East-Florida. How extremely rich in useful medicinal vegetables are the countries of North-America!

of all kinds of dropsies, it is often necessary to have recourse to the use of diuretics, and I believe that some of the worst forms of this disease, such as hydrothorax, are most effectually cured by these medicines. The Digitalis purpurea, so much and so justly celebrated at present, is not, to my knowledge, a native of any part of America*. But we have several native diuretics, which deserve the attention of our physicians. Such are the Seneca-Snake-root, the Lobelia siphilitica, the Serratula spicata, the Cassena, and others.

The first of these, the Polygala Senega of the botanists, along with its diuretic, possesses an emetic, cathartic, expectorant, salivating, and diaphoretic power. I have already hinted at its salivating and cathartic operation. As a diuretic, it has been employed, and found useful, in dropsy, by Tennent, Bouvart, and other writers. I am informed, that it has lately been used, with great success, in the treatment of the cynanche trachealis, or croup, by Dr. Archer of Maryland. He uses a strong decoction of the root, which operates as an emetic, cathartic, and expectorant. This medicine sometimes operates so powerfully as a sudorific, that I have been assured it has been known to remove portions of the mucous body, or rete mucosum, from the skin of blacks who have used it. I do not vouch for the truth of this fact: but I must confess that to me the circum-

* I have, somewhere, seen the Digitalis enumerated among the indigenous medicinal vegetables of the United-States. I know not, however, upon what authority, it is called an American plant. I suspect, some species of Gerardia has been taken for it. The Digitalis, however, bears, extremely well, the open ground of Pennsylvania, and other parts of the United-States. It will, *in time*, assume the appearance of a native, among the many other foreign vegetables, which (especially in the older-settled parts of the United-States) are commonly considered as natives, though, in fact, they are merely *naturalized foreigners*.

stance does not seem impropable. Our Indians use a decoction of this root in syphilis*. I have no confidence in the powers which have been ascribed to the Seneca, in curing the bite of the rattle-snake†. Besides the Polygala Senega, we have several other native species of this genus. I do not know how far they possess the powers which have been ascribed to the Seneca itself. It is probable that they only differ in degree‡. Kiernander, a long time ago, remarked that the Polygala vulgaris, which grows spontaneously in Europe, possesses, though in a less eminent degree, the virtues of the celebrated American species**.

The Lobelia siphilitica is also considerably diuretic. This plant was purchased from the northern Indians, by the late Sir William Johnson, as a remedy in the venereal disease: hence its specific name, siphilitica. I do not believe, after paying some attention to the subject, that this plant has cured confirmed syphilis. I know that the Indians, even those who are best acquainted with the plant, are glad to have an opportunity of applying to the Whites for relief, when they have the disease. They, certainly, do not trust the cure entirely to the Lobelia. They use the bark of the Wild-cherry (Prunus Virginiana), the root of the May-apple (Podophyllum

* They also make use of it in the malignant sore-throat! a disease often very closely allied to croup.

† See Transactions of the American Philosophical Society. Vol. III. No. xi.

‡ From some experiments which I have made with the Polygala sanguinea, which grows abundantly in the vicinity of Philadelphia, I am led to think, that this species may be employed, as an excellent substitute for the common species, now in use.

** See his paper, entitled Radix Senega, in the Amoenitates Academicæ. Vol. II. Dissertatio xxii.

peltatum), and many other plants*. I believe, however, that the Lobelia has been of service in the disease. In gonorrhoea it has certainly performed a cure; but the tendency of the constitution, unaided by medicines, to get rid of this complaint, is well known. I may here observe, that gonorrhoea appears to be much more common among the Indians than syphilis. The Lobelia seems to operate chiefly by its diuretic quality. From their ignorance of botany, many persons in the western country have been using a plant, which they call Lobelia, in the same complaints. I have received specimens of the plant under the name of Lobelia. It proves to be the Serratula spicata, or Spiked Saw-wort. There is good reason to believe, that it has been found useful, not only in venereal complaints, but also in cases of nephritis calculosa, or gravel. THUS IGNORANCE SOMETIMES LEADS TO KNOWLEDGE. This supposed Lobelia is a powerful diuretic. The Indians sometimes drink the decoction of it so strong, that it occasions gleets†. It

* After a careful and pretty extensive inquiry into the subject, I am nearly convinced, that the disease of siphylis was entirely unknown among the North-American Indians, before they became acquainted with the Whites. Many of our Indians (I believe all the tribes) speak of it as a foreign disease, communicated by the Whites. On the subject of the origin of the venereal disease, I can, with much pleasure, refer the student to my friend Dr. Tongue's *Inaugural Dissertation*, published in Philadelphia, last summer.

† They cure these gleets by eating turpentine, as I am informed by my respectable friend Colonel Winthrop Sargent, late Governor of the Missisippi-Territory. An old Indian assured Mr. Sargent, that a decoction of this Serratula cures syphilis, in all its forms. Dr. Allison, one of the army-physicians, has an high opinion of the plant, in this disease. I am told, that a physician, at Pittsburgh, has found it an efficacious medicine in the gravel. It certainly ought to have a fair trial in these diseases. The late Major Jonathan Hart assured me, that the Indians northwest of the Ohio could not cure confirmed syphilis. He said the Lobelia (I suppose the Serratula spicata) had been of service in slight cases: but he was persuaded that the Indians would fall victims to the general complaint, if they were to trust wholly to their own remedies. Mr. Wilson, a gentleman well acquainted with the

is the root of the plant which is commonly employed, but the flowers and the leaves may also be used.

An infusion of another species of Lobelia, I believe the Lobelia inflata*, has been found very useful in the leucorrhoea, or whites. It is a lactescent, and very active plant. I do not know that this acts as a diuretic, and it would have been more proper to have mentioned the plant under the head of stimulants.

The Cassena is a species of Ilex, or Holly. It is the Ilex vomitoria of Aiton, and is a native of Carolina, West-Florida, &c. It has been called South-Sea-tea, or Evergreen-Cassine. It is thought to be one of the most powerful diuretics hitherto discovered. It is held in great esteem among the southern Indians. They toast the leaves and make a decoction of them. It is the men alone that are permitted to drink this decoction, which is called "Black Drink."

The Medeola Virginica grows plentifully in the vicinity of this city, and in almost every other part of the United-States. Its root is white, and tastes a good deal like the cucumber, which has given the plant the name of Cucumber-root†. I am told that this root is diuretic, and has cured dropsies. The sensible quali-

Indians, particularly the Delawares and the Shawneese, most confidently assured me, that they cannot cure the venereal disease, "when it gets into the blood;" but that they can cure the gonorrhoea. He also said, they can remove the venereal disease for a time, but "that it will break out again."

* I now find, that it is the inflata. This is a very common plant in many parts of the United-States. Perhaps, this is the species of Lobelia, which is called, in New-England, Emetic-weed.

† It is also called Indian Cucumber.

ties of the plant do not promise much; but this does not *prove* that it is not an useful medicine.

Section IX. Anthelmintics.

Of the class of medicines called Anthelmintics, or destroyers and expellers of worms, we have several which are entitled to your notice. One of the most celebrated of these is the Carolina Pink-root, the Spigelia Marilandica of Linnæus. This is a very common plant in our southern states. It is a valuable medicine, as has been demonstrated by the physicians of Europe, and of this country. It is commonly given in the form of an infusion, or tea; but I prefer the exhibition of it in powder. It has been accused of occasioning, for a short time, a disagreeable affection of the eyes. But this effect may often be prevented by combining with the Spigelia, some of the common Virginia Snake-root. The Cheerake-Indians have so high an opinion of this plant, that it would sometimes be dangerous for a person to be detected in digging it up, to carry it out of the country. The Whites learned the anthelmintic powers of this vegetable from the Indians*. The Spigelia is said to possess other valuable properties. Infused in wine, it has been found an useful me-

* A convincing proof this, I apprehend, that the American Indians, in common with the rest of mankind, are subject to worms, and to the diseases arising from worms. But, more than this, in my *Memoir on the Diseases and Remedies of the Indians*, I shall show, that the children of the savages are remarkably subject to worms, and to the *larvae* of insects introduced into the system, along with their crude, and often unwholesome, aliment.

dicine in intermittent fevers. But I can say nothing particular concerning the precise mode of administering it in this case.

The Chenopodium anthelminticum grows plentifully in the United-States. It is commonly called Wormseed. The whole plant has a most powerful smell, of which it is very retentive. The taste is bitter, with a good deal of aromatic acrimony.

The root of the May-apple (Podophyllum peltatum), which I have mentioned to you, under the head of cathartics, has often been found to operate as an anthelmintic. It is used as such by the Cheerake, and other southern Indians. Whether it operates by its cathartic quality exclusively, or partly by some other quality, deleterious to the worms, I cannot say. The Whites learned from the Indians the anthelmintic power of this plant*.

The Helleborus fœtidus, or Stinking Hellebore, has been mentioned as a powerful anthelmintic, by Bisset, and other European writers. It has been used in this country, and has been found very efficacious. It is supposed to have been the worm-medicine of a Dr. Witt, who acquired much reputation by the use of it†.

The Cheerake use a decoction of the root of the beautiful Lobelia Cardinalis, or Cardinal-Flower, as a

* The best time for gathering the May-apple, for medical purposes, is the autumn, when the leaves have turned yellow, and are about falling off. The Indians dry it in the shade, and powder it for use.

† I am indebted to Dr. Adam Kuhn for this information. He says that Witt used the powder of the leaves, in combination with the ethiops mineral. It is probable, he added the ethiops merely with the view to disguise the vegetable.

remedy against worms. I have already mentioned the diuretic quality of another species of this genus, the Lobelia siphilitica.

The seeds of the Common Tobacco (Nicotiana Tabacum) have also been found useful as an anthelmintic.

The Silene Virginica, or Ground-Pink, as it is called in some parts of our country, is another native anthelmintic. A decoction of the root is used, and is said to have been found a very efficacious remedy*.

I have not lost all confidence in the anthelmintic powers ascribed to the Polypodium vulgare†, or Male-Fern. I do suppose, however, that too much has been ascribed to this plant. We have several native species of this genus, which it would, at least, be a matter of curiosity to examine. The Polypodium Virginianum grows about this city, and probably possesses the same powers as the European species.

A vegetable, called the Pride of India‡, has lately been mentioned as an excellent anthelmintic. The bark of the root has been used as such in South-Carolina. This vegetable, the Melia Azedarach of Linnæus, is not a native of our country.

* From the information of my friend, the late learned Dr. James Greenway, of Virginia.——This species of Silene, or Catch-fly, grows abundantly, in many parts of the United-States, as in Pennsylvania, Virginia, &c. &c. Some of our Indians have told me, that it is a poisonous plant. This is highly probable, if it be a fact, that it is a very efficacious anthelmintic.

† I do not know that this Polypodium is a native of the United-States.

‡ In South-Carolina, it is also called Poison-Berry-tree, and China-tree. The former is its most common appellation in that state.

I SHALL conclude this account of our anthelmintics by observing, that the southern Indians dress all their dishes, prepared of the Indian-corn, or maize (Zea Mays), with a strong lixivium, or lye, of the ashes of bean-stalks and other vegetables, in order to prevent the generation of worms. They are of opinion, that this grain nourishes the worms exceedingly*. Nor is this opinion peculiar to the Indians.

I HAVE thus, Gentlemen, endeavoured to present you with a specimen, or rather rude outline, of *An Essay towards a Materia Medica of the United-States.* My object has been a collection of facts. I could have wished for more leisure to have pursued the subject: but that leisure I do not possess. I hope, however, that, with all its imperfections, I have presented you with a sketch which will not prove unacceptable to you. I have opened a path, which deserves to be trod by you all.

THE man who discovers one valuable new medicine is a more important BENEFACTOR to his species, than Alexander, Cæsar, or an hundred other conquerors. Even his glory, in the estimation of a *truly* civilized age, will be greater, and more lasting, than that of these admired RAVAGERS OF THE WORLD. I will venture to go farther. All the splendid discoveries of New-

* Cornplanter, a very intelligent Seneca chief, has said, that one reason why the Indians do not rear so many children as the Whites is this, that the children of the former eat large quantities of *green* maize. Certain it is, that the Indians lose great numbers of their children; and I have, in their villages, remarked, that the children have often a pallid, unhealthy appearance, and very tumid bellies.

ton are not of so much real utility to the world, as the discovery of the PERUVIAN BARK, or of the powers of OPIUM and MERCURY, in the cure of certain diseases. If the distance of time, or the darkness of history, did not prevent us from ascertaining, who first discovered the properties of the Poppy, that "sweet oblivious antidote" for alleviating pain, and for soothing, while the memory remains, those rooted sorrows which disturb our happiness: if we could tell who first discovered the mighty strength of Mercury in strangling the hydra of pleasures and of generation: if we could even ascertain who was the native of Peru, that first experienced and revealed to his countrymen the powers of the Bark in curing intermittent fevers; would not the civilized nations of mankind, with one accord, concur in erecting durable monuments of granite and of brass to such benefactors of the species? Would not even the savage, who wants not a sense of benefits conferred upon him, be seen to form the tumulus of stones, or to raise the green sod, the only monuments his humble condition would admit of his erecting? And may we not yet look for the discovery of medicines as important to mankind as Opium, the Bark, and Mercury?

FOR this purpose (the discovery of new and valuable medicines), your situation, Gentlemen, is peculiarly happy. In the pursuit of one of the most dignified and most useful of all the sciences, you are placed in an extensive country, the productions of which have never been investigated with accuracy, or with zeal. From this school*, I will venture to call it the PUNCTUM SALIENS of the science of our country, you are to spread yourselves over the happiest and one of the fairest por-

* The University of Pennsylvania.

tions of the world. In whatever part of this vast continent you may be placed, you will find an abundant field of new and interesting objects to reap in. The volume of nature lies before you: it has hardly yet been opened: it has never been perused. But by your assistance, the knowledge of the natural productions of our country may be greatly extended; and travellers shall then no longer upbraid us with an utter ignorance of the treasures which an all-benevolent Providence has so largely bestowed upon us. May I not flatter myself, that among the number of those whom I am now addressing, there are some of you for whom medical discoveries of importance are reserved? discoveries which would add a lustre to your names, whilst they would ensure to you that which is much more to be desired, in this mixed scene of affairs, AN HAPPINESS THAT IS IMBOSOMED IN THE HAPPINESS OF ONE'S COUNTRY, AND THE WORLD.

END OF THE DISCOURSE.

APPENDIX,

CONTAINING

ILLUSTRATIONS AND ADDITIONS.

PAGE 7. "THE chemical history of the Maize, or Indian corn," &c. Since I delivered this discourse to the Medical Society, I have met* with some account of Marabelli's analysis of this valuable grain. This analysis is, certainly, more complete than that of any preceding writer: but it is not as complete as it should be. According to Marabelli, the grain of maize "contains a "saccharine matter of different degrees of purity, from "which alcohol, the oxalic and acetous acids, may be "obtained; a vegetable amylaceous substance, a glutinous substance; muriat and nitrat of magnesia; carbonats of potash, lime, and magnesia; and iron."

Page 8. GERANIUM maculatum. This, I have little doubt, is the Geranium noveboracense, which is mentioned in Coelln's paper, entitled *Specifica Canadensium*†. On the authority of Governor Colden, it is said, in that paper, that a decoction of the root of this plant, is used by the inhabitants of New-York, in cases of dysentery.

* In Duncan's Annals of Medicine, for the year 1798. Vol. III. p. 208—211.

† See Amoenitates Academicæ Vol. IV. p. 522.

Page 9. Actaea racemosa. The Indians make use of a decoction of this plant, along with other vegetables, as a remedy, given internally, for rheumatism: but they depend much more upon a decoction of the roots of the Actæa, externally applied. It may not be incurious to mention their manner of employing it. They make a hole in the ground, into which they put a kettle, containing a quantity of the hot decoction. The rheumatic limb is laid over the kettle, in such a manner as to receive the influence of the steam. They keep up the heat of the decoction, by putting into it, occasionally, hot stones. I presume that the heat, independently of the vegetable employed, has *something* to do in the cure.

Page 10. Liquidambar asplenifolium. Colden was informed, that the Indians chew the root of this vegetable, with a view to stop hæmorrhages in recent wounds. This effect of the Sweet-Fern may, perhaps, meet with some credit from those who have witnessed the wonderful powers of small doses of the preparations of lead, in diminishing and stopping, almost immediately after their reception into the stomach, hæmorrhages from the uterus, intestines, &c.

Page 11. Spanish oak. In a case of gangrene of the foot, from a puncture of a nail, which came under my notice in the course of the last summer, I gave to the patient very large quantities of a decoction of this oak-bark; at the same time that the affected part was constantly kept wet with the same decoction, or with a poultice made of bread and milk, with the bark. I cannot but ascribe the recovery of my patient entirely to the use of these means; and I am emboldened to recommend to my countrymen the use of this cheap remedy, as one highly worthy of their attention, in similar cases.

Page 11. PERSIMMON. The bark of the root of the Persimmon was one of the principal tonic medicines which were employed in the treatment of dropsies, by the late Dr. Matthew Wilson, of Lewes, in the state of Delaware. Of this medicine Dr. Wilson had an high opinion; and he has particularly remarked, that it gently purges; an effect which I have observed from the employment of galls, alum, and several other astringents. MANY OF THE ASTRINGENT MEDICINES DO PURGE.

Page 12. CORNUS florida, or Common Dogwood. The bark of the root, stem, and smaller branches is used. That of the root is, by most persons, deemed the more efficacious. Sometimes, the bark of this Dogwood is combined with that of the Liriodendron, and used either in decoction, or in substance.

Page 13. "I AM well acquainted with a physician," &c. The room in which the flowers of the Magnolia glauca produced the effects here mentioned, was not a small one, and was well aired. It was in the month of June. The late Mr. S. P. of Philadelphia, was always affected with a sense of great uneasiness about his chest, and with a strong tendency to fainting, whenever he entered a room where the flower of this Magnolia was.—A decoction of the bark of the root of the Magnolia is said to have been found very useful in the treatment of rheumatic affections.

Page 14. THE Liriodendron Tulipifera. In some parts of the United-States, the bark of this tree has been used, and has acquired much reputation, as a remedy in cases of gout and rheumatism. As a medicine possessing properties very nearly allied to those of the

callida amara, or heating bitters, which have, for ages, formed a part of the celebrated gout-powders, I think it not improbable, that the Liriodendron may have been used, with the *seeming* advantage of putting off, for a time, the inflammatory paroxysm of the gout. But the well-known history of the gout-powder is not calculated to encourage one to use (as a remedy, for the worst of diseases) a medicine which might only alter the shape of the disease, and give it a direction to the more essentially important part of the human frame.

Page 17. DATURA Stramonium. Since the publication of the first edition of my *Collections*, I have had many opportunities of employing this medicine. I have used it chiefly in the form of an extract, prepared from the fresh leaves. I have principally exhibited it in cases of mania and epilepsy. I cannot hesitate to say, that it is a medicine of great and invaluable powers. It is my intention to publish the particulars of the cases in which I have employed this medicine, in a separate work*. I shall, therefore, content myself, in this place, with observing, that I have found the Stramonium especially beneficial in cases of mania attended with little or no fever, or with a cold skin, and languid circulation. I have thought it necessary to give the medicine in very large doses. Beginning with a few grains, the dose is gradually increased, and in a few days it may, with safety, be taken to the extent of fifteen or twenty grains. In one case of mania, I, at length, gave it to the extent of sixty grains, at a dose. When the patient had continued upon this dose for some time, she broke out into biles upon various parts of the body, and was, at length, discharged from the Hospital, perfectly cured. In se-

* Medical Facts, Experiments. Observations and Inquiries.

veral other cases of mania, the Datura has been of essential use. Except in one case, I have not perceived any inconvenience from it. In this case, whilst the patient was taking the medicine to the extent of thirty grains, it produced a very enlarged dilatation of the pupil of the left eye, and a palsy of the palpebra of the same eye. But even this was only a temporary inconvenience, which was removed, in a very short time, by the application of a blister. The patient resumed the use of the extract, and was finally discharged from the Hospital, apparently cured.

The beneficial effects of the Stramonium in cases of epilepsy have been likewise very manifest. In a case of epilepsy, accompanied, at various periods, with fever, the medicine seemed to increase the sense of fulness in the head, and other disagreeable symptoms. But in several other cases, I exhibited it with the most manifest advantage. Although in no case have I been able to effect a cure with the Stramonium, I have, certainly, administered it with the effect of protracting the fits, and of diminishing their violence. Perhaps, much more than this cannot be said, with a strict regard to caution, of any other of the many medicines which have been recommended for the cure of epilepsy.

I have been informed, that in the state of Kentucky, the seeds of the Stramonium are sometimes exhibited, with advantage, in cases of chronic rheumatism. On this subject, I cannot say any thing from my own experience. The seeds of this vegetable are, unquestionably, endued with very active powers. This is abundantly evident from the pernicious effects which are so frequently observed in children, who have swallowed the

seeds. Dr. John Archer, of Maryland, has found them of much advantage in cases of epilepsy*. I have used them, with seeming benefit, in a case of mania.

For much information concerning the Stramonium, I refer the reader to the late ingenious Dr. Samuel Cooper's *Inaugural Dissertation on the Properties and Effects of the Datura Stramonium*, &c. Philadelphia: 1797. This is a dissertation of great merit. It is well calculated to show, how much might have been expected from the labours of the amiable author, had it pleased Providence to prolong his existence, to a more matured age. But the withered hand of death is ever ready to grasp the choicest flowers upon earth.

Page 18. Kalmia Latifolia. I have now employed the powder of the leaves of this plant, exhibited internally, in some cases of tinea capitis. In this very troublesome disease, the Kalmia is, certainly, a medicine entitled to attention. I have also employed the powder of the leaves, made into an ointment with lard, and externally applied to a disagreeable herpetic affection of the skin. In this case, also, I have found it extremely useful.——Even in confirmed siphylis, it has *seemed* to do good. In South-Carolina, this species of Kalmia is called Callico-tree.

Page 19. "a decoction of the Andromeda Mari-"ana has been found useful as a wash in a disagreeable "ulceration of the feet, which is not uncommon among "the slaves, &c. in the Southern states." This complaint is very common, particularly among the negroes,

* See Dr. Cooper's Inaugural Dissertation, &c. p. 52—54.

and the poorer sort of white people, in Carolina, Georgia, &c. It is called "toe-itch," and "ground-itch." It is a kind of ulcerous excoriation between the toes, sometimes extending as high as the instep, and is attended with most intolerable itching. It is, probably, in a great measure, the consequence of inattention to cleanliness. Is it occasioned by particular insects? Some persons, with whom I have conversed on the subject, are of opinion, that it is owing to the great warmth of the waters to the southward, in which the inhabitants are accustomed to wade a great deal. The disease is sometimes seen in Pennsylvania. Besides the Andromeda Mariana, or Broad leaved Moor-wort, a decoction of the leaves of the Kalmia latifolia is used for the cure of this complaint. The decoction of the leaves of both these plants is used. They are both called "Wicke" to the southward.

Page 20. "I KNEW a woman," &c. She was a stout, and seemingly very healthy, woman. She informed me, that a lady of her acquaintance was affected in the same way by this tea. I could not learn, whether the flowers of the Sassafras produced a similar effect.

GINSENG. Notwithstanding what I have said, in the note, I must not conceal, that the Indians, in some parts of North-America, are said to use the Ginseng, "on religious occasions*."

Page 21. ARUM triphyllum. In its recent state, the root of this species of Arum is extremely acrid. By drying, we deprive it of much of its active quality. In this latter state, the root is frequently prescribed in catarrhal affections, of long standing; and (if I do not mistake) in

* On the authority of Adair.

asthma. The recent root boiled in lard, to the consistence of an ointment, has often been found useful in cases of tinea capitis, and in other similar affections.

Page 23. The Ranunculus bulbosus. Every part of this species of Ranunculus is endued with an acrid quality. But it is especially the bulbous-like root which has frequently been used as a substitute for cantharides. Where the foreign and native species of blistering-flies cannot readily be procured, this Ranunculus ought not to be neglected. I have employed it, and am disposed to think, that it gives a more *durable* irritation to the part to which it is applied, than the animal blisters which I have mentioned. If this suspicion be well founded, it will not be denied, that there are cases in which the Ranunculus ought even to be *preferred* to those blisters. Among other such cases, I may mention vertigo, and affections of the stomach, both originating in a misplaced or irregular gout. I must not omit to add, that the roots of the Ranunculus, that are collected in the fall, may be very well preserved through the winter, by burying them in some fine, siliceous sand. When thus preserved, they retain, with very little diminution, their active irritating quality.

Rhus, or Sumac. "In many persons" the Rhus radicans, Rhus Vernix, and Rhus Toxicodendron, "in-
"duce a peculiar and very troublesome vesication,
"which I have frequently removed, in a short time, by
"means of a mercurial wash." I have employed, in these cases, an aqueous solution of the muriate of mercury, or corrosive-sublimate. Nothing that I have made use of has so effectually removed the disagreeable symptoms as this lotion. Its good effects are very spee-

dily perceived. Many other applications are made use of, in various parts of the United-States. The principal of them are prepared from vegetables. That some of these do good, I shall not deny: but, compared to the preparation of mercury, which I have mentioned, they are very inert applications. Of the vegetables, I think I have employed none with such decided advantage as the juice (mixed with cream) of a native species of Urtica, or Nettle; perhaps the Urtica pumila of Linnæus—"It is said that the bark of one species (but I cannot tell "you what species) has been found useful in intermittents." Perhaps, it is the bark of the Rhus glabrum, or Smooth Pennsylvania Sumac. The juice of the Upland-Sumac (Rhus glabrum) is said to be excellent for removing warts, and also tetters. It is applied to the affected parts. This shows, that even this species, which is generally deemed innocent, possesses some active quality. Indeed, I am inclined to think, that all the American species of the genus Rhus are poisons to *some* constitutions. I am assured, that the Rhus typhinum, or Stags-horn-Sumac, has affected the skins of certain persons, in the same manner as the Rhus radicans, &c. Yet the Rhus typhinum is generally considered as an innocent species. In some parts of the United-States, the Rhus glabrum is called "Indian Salt." It is said, that the Indians employed the saline powder which invests the berries, as a condiment to their animal food. They also employ this substance as a mordant, or fixer, for the red colour with which they die the quills of the porcupine. They use other mordants for the same purpose.—With great satisfaction, I refer the medical and philosophical reader of these *Collections*, to Dr. Thomas Horsfield's *Experimental Dissertation on the Rhus Vernix, Rhus radicans and Rhus glabrum*. This dissertation, which

was published in Philadelphia, in 1798, reflects great honour upon the ingenious author, and even credit upon the University which gave it birth.

Page 25. The Zanthoxylum. There are, in the United-States, at least two distinct species of this genus, viz. the Zanthoxylum Clava Herculis of Linnæus, and the Zanthoxylum fraxinifolium of Marshall. The latter is the species which is most common in the northern parts of the United-States, where it is known by the name of Prickley-Ash. The other species is more confined to the Southern states. This last, I doubt not, is the plant which Lawson alludes to, when he tells us, that the Indians cure the venereal disease "by a Berry that salivates, as *mercury* does." He adds, that "they use sweating and decoctions very much with it; "as they do almost on every occasion*." I suppose that this is also the plant which Lawson calls Pelletory. "It is used (he says) to cure the tooth-ach, "by putting a piece of the bark in the mouth, which "being very hot, draws a rhume from the mouth, and "causes much spittle†." Both species of Zanthoxylum appear to be well worthy of the attention of American physicians. Unquestionably, they are powerful vegetables.

Page 27. Eupatorium perfoliatum. A watery infusion of the leaves of this very common plant is a powerful, and not disagreeable, bitter. Examined by the common chemical tests, it appears to contain a great deal of the astingent principle. I think this promises to be a really useful medicine in the treatment of

* A New Voyage to Carolina, &c. p. 218. London: 1709.

† The same, p. 100.

intermittent fevers. Some of our Northern Indians, who make use of it in these cases, call it by a name, which may be translated " Ague-weed."

Page 27. SANGUINARIA Canadensis. Dr. Schoepf makes mention both of the emetic and purgative power of the root of this pretty plant, which is extremely common in almost every part of the United-States. He says, a weak decoction of it is used in gonorrhoea, and against the bites of serpents, and in bilious diseases; that the juice is employed against warts; and (on the authority of Colden), that the powder of the root (in the dose of one drachm) is exhibited in jaundice*. I have been informed, that in some parts of New-England, a spirituous tincture of the roots is frequently exhibited, as a tonic bitter, in different diseases. A decoction of the roots is greatly recommended, as an external application, in the management of old ulcers. In this latter case, it is, perhaps, more worthy of a trial than in cases of jaundice.

Page 29. ASCLEPIAS decumbens. The Asclepias decumbens and the Asclepias tuberosa of Linnæus appear to me to be merely varieties of the same species. Dr. Schoepf mentions a plant which, he says, is called in Maryland, Butterfly-root, and Pleurisy-root. He says, he has not seen the plant; but observes, that the name Butterfly-root seems to show, that it belongs to the class of Diadelphia†. I am pretty certain, that this plant is no other than the Asclepias decumbens. It is called Butterfly-weed, &c. because its flowers are visited by great numbers of butterflies.

* Materia Medica, &c. p. 86. † The same, p. 160.

Page 29. CONVOLVULUS panduratus. In Virginia, and some other parts of the United-States, the root of this plant has been much recommended in cases of gravel. It is used either in powder or in decoction. Is it constantly or considerably diuretic?

Page 32. "A species of Croton, or perhaps of "Stillingia," &c. This is one of the several medicines (and some of them are possessed of active qualities) which are employed by the Indians of Carolina, Georgia, and other southern parts of the United-States, as remedies for the cure of the venereal disease. It entered into the composition of a medicine, which was much employed by a Dr. Howard (of North-Carolina), as a cure for the yaws. This medicine contained, besides the supposed Croton, the vines, or climbing stems, of the Bignonia crucigera.——It is not the Northern Indians only who make use of the Lobelia siphilitica in the treatment of the venereal disease. This is also one of the articles in the *materia medica siphilitica* of the Cheerake, and other southern tribes.

Page 33. POLYGALA Senega. Since the beginning of the year 1798, I have employed a strong decoction of this plant in several cases of cynanche trachealis, or hives. I am persuaded, that the Seneca is a very important medicine in the treatment of this common, and too frequently unmanageable, disease; and praise, in my opinion, isdue to Dr. Archer for his important discovery: for such I cannot but deem it. That the Seneca is a specific, or certain remedy, for the cure of the croup, I do not believe: but, from my own experience, I am led to repose more confidence in the use of this medicine than in any other. I have made use of a very strong

or saturated decoction of the root. I have always given it in large quantities. It appears to be chiefly beneficial, when it occasions an expectoration of mucus, and when it proves emetic. It is also very useful by virtue of its purgative quality. But I have known it to occasion very plentiful stools, without benefiting the patient. Indeed, in the exhibition of the Seneca, Iwould rather wish to guard against *large* purging. I have sometimes treated my patients *almost* entirely with the Seneca. Even in such cases, I have perceived most unequivocal good effects from it. But I have, more generally, given, along with the Seneca, calomel, and sometimes calomel combined with ipecacuanha. I have not omitted the employment of the lancet (though this, in many cases of croup, is not absolutely necessary), and the use of blisters, or sinapisms, applied near to the seat of the disease. I am happy to close this short notice by observing, that several respectable physicians in Philadelphia inform me, that they have used the Seneca, with much advantage, in the disease in question.——For the particular manner in which Dr. Archer uses this medicine, I must refer the reader to his letter addressed to me, and published in the *Medical Repository* of New-York*.

I have had no experience with the Seneca in cases of pneumonia. Notwithstanding what has been so frequently said concerning its great efficacy in this disease, I confess that I cannot believe, that it is a medecine adapted to the very first stage of pneumonia, while violent inflammatory symptoms are still present. After the liberal use of the lancet, it is highly probable, that the Seneca will be found a very important medicine. In the pleurisy, as it is called, which prevails in many of

* Vol. II. No. 1. Art. vii.

the low and marshy countries of the United-States, I do not doubt, that it has been of real use. This pleurisy, or pneumonia, is a true intermittent or remittent, attended with a local pain, either in the side or in the head. When the pain is principally confined to the head, the disease is called (a ridiculous name) "the pleurisy in the head." In either case, it is a complaint in which stimulating medicines (and such the Seneca is) have been exhibited with advantage. In cases of this kind, though bleeding is often necessary, it will not be sufficient to effect a cure. Even blisters fail to destroy the type of the disease. In my own hands, the Peruvian bark has been exhibited, during the remission of pain, with the happiest effect in preventing the recurrrence of the violent paroxysm.

Page 36. Lobelia inflata. This is a very common plant in many parts of the United-States. Its sensible qualities are much in favour of its medical powers. The leaves have a very acrid and pungent taste. An infusion of them, in boiling water, when suffered to stand for some time, is at first, insipid to the taste; but it soon excites a very perceptible, and even considerable, sense of pungency upon the tongue, &c. which continues a good while. The taste is very similar to that of tobacco. This species of Lobelia, in all probability, will be found a diuretic.

The Cassena. This is also called Cusseena, and Yaupon, or Yopon. A very favourite inquiry, in which I have been engaged for several years, and in which I am still engaged, naturally leads me to mention, in this place, a very remarkable tradition which some of our Indian tribes preserve concerning this species of Holly. "The "Savages of *Carolina* (says Mr. Lawson, who is an

author of much credit) "have this tea in veneration, "above all the plants they are acquainted withal, and "tell you, the discovery thereof was by an infirm *Indi-* "*an*, that laboured under the burden of many rugged "distempers, and could not be cured by all their Doc- "tors; so, one day, he fell asleep, and dreamt, that if "he took a decoction of the tree that grew at his "head, he would certainly be cured; upon which he "awoke, and saw the *Yaupon* or *Cassena*-Tree, which "was not there when he fell asleep. He followed the "direction of his dream, and became perfectly well in "a short time. Now, I suppose (continues our author), "no man has so little sense as to believe this Fable; yet "it lets us see what they intend thereby, and that it has, "doubtless, worked feats enough, to gain it such an "esteem amongst these Savages, who are too well versed "in vegetables, to be brought to a continual use of "any one of them, upon a mere conceit or fancy, with- "out some apparent benefit they found thereby; especi- "ally, when we are sensible, they drink the juices of "plants, to free nature of her burdens, and not out of "foppery and fashion, as other nations are oftentimes "found to do*."——I do not, indeed, imagine, that the Indians came to the first knowledge of the Cassena in the manner their tradition informs us. But, if I do not greatly mistake, a very interesting use may be made of this tradition: one which Mr. Lawson, in all probability, little thought of. The Chinese preserve a tradition concerning Darma, the son of a King of the Indias, who was driven into China in the year 519, of the Christian era. Darma gave himself up entirely to religion, passing his days and nights, without sleep. At length, he fell asleep. To atone for this crime, the good

* A New Voyage to Carolina, &c. p. 221, 222.

man abscinded his genitals, the eye-lids of his eyes, and then enraged threw himself upon the earth, from which little shrubs now sprang up. These were the Tea, which has since spread its influence over more than half the globe. Darma now began to use the leaves of the new shrub, upon which his mind was affected with great joy, and he was restored to perfect health. He even ceased to be emasculate. These wonderful properties of the tea were made known by Darma to his disciples, upon which the leaves of the plant were received into universal use. Kæmpfer, from whose *Amœnitates* this story is taken, has given us a picture of Darma; but I presume the likeness could not be warranted*.

Between the tradition of the Chinese concerning the first use of their beloved tea, and the tradition of the Americans concerning the first use of the Cassena, there is such a remarkable coincidence, that we cannot well hesitate to believe, that the two stories are actually branches of a common stock. This will appear the more probable, when it is considered, that many of the American tribes are very closely allied to the Chinese, Tartars, and Japanese, not only by their physical appearances, but also by their languages, their customs, &c†. Perhaps, the Indian tradition concerning the Cassena may even lead us to conjecture, at what time some of the Carolina and other savage tribes separated from their parental stocks, in Asia. It is possible that the word *Yaupon* is preserved by the Americans, in memory of the islands of Japan, from which some of them are descended.

* I have not, at present, an opportunity of consulting Kæmpfer's work. I take the story from this celebrated naturalist, through the medium of Dr. Murray's Apparatus Medicaminum.&c. Vol. IV. p. 246, 247.

† New Views of the Origin of the Tribes and Nations of America. Appendix. p. 30, 31, 32. Philadelphia: 1798.

Pages 37, 38. SPIGELIA Marilandica. In some parts of Carolina, &c. this invaluable plant is known (among other appellations) by the name of Snake-root. It is the *Unsteetla* of the Cheerake-Indians. Every part of the plant is possessed of the anthelmintic property, and accordingly in Carolina the physicians employ the whole plant; chiefly in decoction*. But the active power unquestionably resides more especially in the roots. It is the opinion of many persons, that the deleterious effects which occasionally occur from using this vegetable do not arise from any pernicious property inherent in the Spigelia, but from the root of a distinct plant which is often mixed with the Spigelia. I do not think this notion is entitled to any serious attention. The Spigelia is, without doubt, a poisonous and narcotic vegetable. It is, in all probability, by virtue of this poisonous quality, that it proves so beneficial in cases of worms. I am acquainted with a very intelligent physician, who in the exhibition of the Spigelia always deems it necessary, or proper, to persevere in the use of the medicine, until it produces some very decided effect upon the brain. I must confess, however, that I have often found it completely efficacious without observing, that it has occasioned the least inconvenience to the system. That it has sometimes done mischief, will not, I believe, be denied. Professor Bergius informs us, that he has known instances of convulsions cured by the Spigelia, although no worms were expelled by it†. Dr. Garden, speaking of this plant, says, "It especially answers in continued or "remitting low worm-fevers, in which I use its decoc-

* Both Lining and Garden were generally in the habit of using the Spigelia in substance; and this is, unquestionably, the most precise method of employing it. In Philadelphia, an infusion or decoction of the plant is more commonly made use of.

† Materia Medica e Regno Vegetabili, &c.

" tion, adding a small proportion of the root of the ser-
"pentaria Virgin. Its effects in abating the feverish exa-
" cerbations are so considerable, that in these I consi-
" der it as the most powerful sedative*. It is an excellent
" attenuant†." I have been induced to take notice, in this place, of the observations of Bergius and Garden, because a pretty extensive use of the Spigelia, has now convinced me, that this medicine very often affords relief, and indeed effects a cure, in cases in which worms are supposed to be present, but in which none are discharged. If I do not greatly mistake, this will be found an highly useful medicine in some of the febrile diseases of children, unaccompanied by worms, especially in the insidious remittent, which so frequently lays the foundation of dropsy of the brain.

Page 38. The Chenopodium anthelminticum. This vegetable is also called Jerusalem-oak. The whole plant may be employed. Sometimes, the expressed juice is used, in the dose of a table-spoon full for a child, two or three years old. More commonly, however, the seeds are employed. They are reduced to a fine powder, and made into an electuary with some syrup. Of this the dose for a child, two or three years old, is a table-spoon, full taken early in the morning. The patient is to be

* That the Spigelia is a sedative, taking this term in the sense in which it generally is, and always ought to be, employed, I do not believe, notwithstanding the very respectable authority of Dr. Garden, and the high authority of Dr. Darwin. This last mentioned author (to whose genius and extensive learning I am always willing to pay due deference) arranges our celebrated anthelmintic in his class or article of *Torpentia*. (See *Zoonomia*). With much more propriety, he might have arranged it in his second article, to which he has given the name of *Incitantia*. In fact, the effects which the Spigelia exerts upon the human system are very similar to those which Datura and other similar articles (confessedly stimulants)are known to exert. In particular, the operation of the Spigelia upon the brain, very decidedly, demonstrates its stimulant power.

† Essays and Observations, Physical and Literary. Vol. III. Art. x. p. 149.

kept without nourishment for some hours after. After supper a like dose is administered. It is often necessary to continue this course for several days. Great numbers of lumbrici are frequently discharged after the use of a few doses of the medicine.

Page 39. Common Tobacco. There is a peculiar mode of employing the leaves of the Tobacco in cases of worms, which I cannot avoid mentioning in this place, especially as it has, in many instances, produced very happy effects. The leaves are pounded with vinegar, and applied, in the shape of a poultice, to the region of the stomach, or other part of the abdomen. In consequence of this application, worms are often discharged, after powerful anthelmintics have been exhibited internally in vain. We ought not to be surprised at this effect of the Tobacco, since we know, that the same vegetable applied externally is often very efficacious in inducing vomiting. Accordingly, I have, for some years, been in the habit of applying Tobacco-leaves to the region of the stomach of persons who have swallowed large qaantities of opium, and other similar articles, with the view to destroy themselves. It is well known, that in these cases the stomach is often extremely inirritable, insomuch that the most powerful emetics have little effect in rousing that organ into action. Here, as an auxiliary at least, the Tobacco, used in the manner I have mentioned, is, certainly, very useful, and in many instances, ought not to be neglected.

Page 39. Melia Azedarach. When I published the first edition of my *Collections*, I had not *any* experience in the use of this vegetable. Since that period, however, I have used it in several cases of worms, and always

with advantage. Indeed, I am inclined to think, that the character of this new anthelmintic has not been too highly drawn. I will not assert, that it ought to be preferred to the Spigelia: for I have had much more to do with this, than with the Melia. The Melia is, unquestionably, a valuable anthelmintic, and ought to be introduced into general practice. I have employed the bark of the root, both in substance, and in the shape of a saturated decoction. In the case of an adult, who took the decoction in large quantities, *with the effect of discharging great numbers of worms*, it seemed to occasion some confusion of head, and trembling of the hands. These, perhaps, were accidental symptoms: but I am disposed, with the patient, to ascribe them to the medicine. The worm-cases in which I have found the Melia useful were cases of the common round-worm, or Lumbricus intestinalis. I have not had any opportunity of trying how far it is a remedy against the tænia, or tape-worm. But I am informed that, in Carolina, it has been used with the effect of discharging great numbers of this species of worm. Should this prove to be the case, the Melia will be doubly entitled to our attention as an article of the materia medica.—It is not merely in cases of worms, that this vegetable has been found useful. Mr. Andrew Michaux, an intrepid French botanist, informed me, that in Persia, where this tree grows spontaneously, the pulp which invests the stone of the fruit is pounded with tallow, and used as an "antisphoric," in cases of tinea capitis in children.

Is the Melia a narcotic or poisonous vegetable? Its remarkable effects in destroying and dislodging worms renders this probable, but not certain: for many articles which, with respect to the human body, are entirely in-

nocent, are known to be noxious to intestinal worms, and many other animals. Such is sugar, as has been demonstated by the experiments of Redi, Carminati, and other writers. The case which I have alluded to renders the deleterious quality of this vegetable very probable. I may add, that in some parts of Carolina, the root is deemed poisonous. Horses and horned cattle, however, eat, with impunity, the leaves and berries. Certain species of birds (particularly the Turdus migratorius, or Robin, and the Turdus Polyglottos, or Mocking-bird), devour the berries in such large quantities, that after eating of them, they are observed to fall down, and are readily taken. Does not this circumstance render it probable, that the berries contain an intoxicating quality? This, however, I believe, is not the general opinion of the inhabitants of Carolina, who ascribe the condition of the birds merely to the circumstance of their having eaten so abundantly of the berries, that they injure entirely by distention. The ripe berries have a sweetish, but nauseous taste.

As the Melia is now completely naturalized to the states of Carolina and Georgia, it may not be amiss to close this article by observing, that the fruit of this vegetable is employed in Japan for furnishing an expressed oil, which grows hard like tallow, and is used for making candles*. May not our fellow-citizens, to the south, render it worth their attention to follow the example of the Japanese, in the instance I have mentioned?

It remains for me to say a few words concerning two other native American plants, both reputed anthel-

* See Professor Thunberg's Travels in Europe, Africa, and Asia, &c. &c. Vol. III. p. 228. English translation. London: 1795.

mintics, which are not mentioned in the preceding Discourse. These are the Galega Virginiana, and the Cleome dodecandra?

The Galega Virginiana, or Virginia-Goats-rue, is one of the most beautiful of the known North-American plants of the class of Diadelphia. It is very common in many parts of Pennsylvania, New-Jersey, &c. In Jersey, it is called Cat-gut, from the resemblance of some of its roots to the article of this name. A decoction of the roots is reputed a powerful anthelmintic. I have never used it. It may be observed, in this place, that, notwithstanding the general character of the class of Diadelphia, there are in this class some very active and even deleterious vegetables. It is somewhat in favour of the anthelmintic power of the Galega Virginiana, that some West-India species of the same genus are said to intoxicate and poison fish.

The Cleome dodecandra? or perhaps Cleome viscosa, is a native of Pennsylvania, New-York, &c. It grows, in great abundance, in the neighbourhood of Albany. The whole plant has an extremely fetid smell. In some parts of the United-States, the root is employed as a remedy against worms. How far it is really useful with this intention, or by what power it acts, in destroying the worms, I do not know. I do not mention the anthelmintic virtue of the Cleome, merely on the authority of Dr. Schoepf*.

THE END.

* See his Materia Medica, &c. p. 106.